the influence of $TiCl_4$ vapor. The corrosion resistance of the metals in all the investigated media decreases in the series Mo, Ni, Cr, V, Mn. It is shown that the interaction of the steels with titanium chlorides in the melt is associated with a simultaneous coarsening of the structure of the steels, which causes a decrease of their mechanical strength. From this point of view, steel-3 has the lowest strength, and it should therefore be used in the manufacture of stationary parts subjected to small loads. The behavior of steel-3 under an anodic potential was shown to depend strongly on the conditions of its contact with the more electronegative titanium metal. Orig. art. has: 6 figures and 3 tables.

SUB CODE: 07,11/ SUBM DATE: 18Nov64/ ORIG REF: 003/ OTH REF: 004

GOPIYENKO, V.G.

BELETSKIY, M.S.; GOPIYENKO, V.G.; SAKSONOV, Yu..G.

A new modification of Ti_3O_5. Zhur.neorg.khim. 2 no.9:2276-2278 S '57. (MIRA 10:12)

(Titanium oxides)

137-58-4-6937

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 88 (USSR)

AUTHORS: Ivanov, A.I., Tigane, V.G., Gopiyenko, V.G.

TITLE: Experiences in Pilot-plant Production of Recrystallized Silicon Carbide (Opyt polupromyshlennogo polucheniya rekristallizovannogo karbida kremniya)

PERIODICAL: Tr. Vses. alyumin.-magn. in-ta, 1957, Nr 39, pp 368-386

ABSTRACT: A procedure for making items of recrystallized SiC for employment in equipment for the aluminum and magnesium industry is developed on a pilot-plant scale. The technical feasibility of shaping objects of various sizes from SiC by pneumatic ramming is demonstrated. It is established that prior oxidizing roasting impairs the quality of the products (there is a rise in SiO_2 content, a loss of strength, and an increase in porosity). A temperature study of graphiting furnaces was conducted in which temperature zones for recrystallization of SiC items as a by-product of the graphiting of coal products were found. The physical and mechanical properties and the resistance of the products to chemicals were studied under laboratory conditions. Ideas on the mechanism of the process of SiC crystallization

Card 1/2

137-58-4-6937

Experiences in Pilot-plant Production of Recrystallized Silicon Carbide are adduced on the basis of the findings of X-ray structural analysis.

I. B.

1. Silicon carbide--Crystallization 2. Silicon carbide--Production
3. Silicon carbide--Processes

Card 2/2

137-58-6-12001

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 116 (USSR)

AUTHOR: Ivanov, A.I., Gopiyenko, ~~V.G.~~

TITLE: Certain Physico-chemical Characteristics of Materials and Processes of Electrolytic Production of Titanium (Nekotoryye fiziko-khimicheskiye kharakteristiki materialov i protsessov elektroliticheskogo proizvodstva titana)

PERIODICAL: Tr. Vses. n.-i. alyumin.-magn. in-ta, 1957, Nr 40, pp 365-379

ABSTRACT: As a result of an investigation the following was established: 1) At a temperature of 700-800°C the solubility of $TiCl_4$ in fused chlorous compounds of alkali metals and alkali earth metals constitutes 0.5-4.0% after a 30 min saturation period and 1-5% after a saturation period of 1.5 hours. The greatest solubility is observed in the mixture $4KCl+1\ MgCl_2$, in the eutectic mixture of KCl LiCl, and in KCl. The solubility of $TiCl_4$ in salts containing fluoride may be raised into the range of tens of percent, a fact which is explained by the interaction of $TiCl_4$ with fluorine salts and by the formation of free and complex compounds of Ti. 2) At temperatures between 600 and

Card 1/3

Certain Physico-chemical Characteristics of Materials and Processes (cont.)

800° the solubility of TiO_2 in fused chlorides of alkali metals is close to zero, while in chlorides of Ba, Ca, and Al it does not exceed 0.5%. More than 3% of TiO_2 dissolve in fused fluorides (KF, NaF, KF+NaF, Na_3AlF_6, and K_2TiF_6) at temperatures of 850-950°. A mixture of fluortitanate with with chlorides is found to be an effective solvent of TiO_2 at a temperature of 700-800°. 3) The employment of the vacuum-separation system is inexpedient when processing cathodic precipitates containing considerable quantities of fluoride salts. 4) Microscopic inspection, sketching, and photography, sedimentometric analysis, measurement of the specific surface and specific gravity, and structural X-ray analysis, all these may be employed in the evaluation of the quality of powdered Ti obtained electrolytically. The method of measuring the electric resistivity of the Ti powder is not suitable for the evaluation of the quality of the metal. 5) Alloyed steels 1Kh18N9T, EI432, and others, as well as Ni, brass, Mo, and other metals may be recommended for work in an atmosphere of $TiCl_4$ vapors at temperatures not exceeding 136°. No metals have been found that are sufficiently stable to be employed in an atmosphere of $TiCl_4$ in the range of temperatures from 300° to 800°. "Ftorplast-4" exhibits extreme chemical stability in $TiCl_4$ vapors at temperatures up to 200°. Good stability in $TiCl_4$ vapors at temperatures of 700-800° was also exhibited by fireclay, magnesite, talcomagnesite,

137-58-6-12001

Certain Physico-chemical Characteristics of Materials and Processes (cont.)

quartz, porcelain, sintered corundum, forestite, and graphite. Carbides of Si and Ti disintegrate rapidly under such conditions.

M.M.

1. Titanium--Electrolysis 2. Titanium chlorides--Solubility
3. Titanium dioxides--Solubility 4. Metal chlorides--Solvent action
5. Fluorides--Solvent action 6. Titanium chloride vapors--Properties

Card 3/3

137-58-6-11999

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 115 (USSR)

AUTHORS: Ivanov, A.I., Maurits, I.I., Gopiyenko, V.G.

TITLE: Electrolysis of Chlorides of Titanium in Melts With a Liquid Cathode (Elektroliz khloridov titana v rasplavakh s zhidkim katodom)

PERIODICAL: Tr. Vses. n.-i. alyumin.-magn. in-ta, 1957, Nr 40, pp 380-387

ABSTRACT: It has been established that by means of electrolysis of $TiCl_3$ and $TiCl_4$ it is possible to obtain metallic Ti in the form of sponge or powder on the surface of a liquid cathode. Best results were obtained by employing a Zn + Mg alloy (60-70% Zn) as the cathode and by utilizing electrolytes having the following composition (in %):
40% KCl + 40% NaCl + 20% $MgCl_2$ and 44% NaCl + 36% $CaCl_2$ + + 20% $BaCl_2$;
the temperature was maintained at 700°C, the cathode cd was equal to 0.2-3 a/cm^2 and the interpolar gap was 60-90 mm. The powders obtained contained up to 97% of metallic Ti. Impurities are introduced in the materials that constitute the liquid cathode, the electrolyte, the anode, and the raw materials. G.S.

Card 1/1

1. Titanium chlorides--Electrolysis 2. Titanium powders--Production 3. Cathodes (Electrolytic cell)--Materials 4. Electrolytes--Composition

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000516020009-8"

137-58-6-12002

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 116 (USSR)

AUTHORS: Ivanov, A.I., Gopiyenko, V.G.

TITLE: Electrolysis of Titanium Tetrachloride in Fused Chlorous Salts (Elektroliz chetyrekhkhloristogo titana v rasplavlennykh khloristykh solyakh)

PERIODICAL: Tr. Vses. n.-i. alyumin.-magn. in-ta, 1957, Nr 40, pp 388-398

ABSTRACT: Investigations of the electrolysis process of $TiCl_4$ have established that Ti can be obtained by means of electrolysis performed in fused salts of Li, K, Na, Mg, Ca, and Ba. Best results were achieved when the $TiCl_4$ was subjected to electrolysis in baths containing the following substances: 1) KCl + NaCl + 20% $MgCl_2$ (the content of KCl and NaCl may each vary from 0 to 80%) at a temperature of 650-750°C and a cathode cd of 0.3-5.0 a/cm^2; 2) 30% $CaCl_2$ + 25% $BaCl_2$ + 45% NaCl at a temperature of 600-750° and a cathode cd of 1.0-5.0 a/cm^2. The cathode metal contains 90 to 100% of Ti and is contaminated with Si, Al, C, and H - all substances which are contained in materials of which the electrolyzer (porcelain,

Card 1/2

Electrolysis of Titanium Tetrachloride in Fused Chlorous Salts

quartz, graphite), the anode (graphite), and the cathode (steel) are made, as well as in insufficiently pure raw materials and Ar. When employing an electrolytic bath of the type described under Nr 1, the current efficiency reaches the value of 44.5%, the degree of utilization of $TiCl_4$ constitutes 54.4%; the specific density of the Ti powder after hydrometallurgical processing and drying amounts to 4.15-4.30 g/cm^3, the size of 50% of the particles being of -200 mesh class. A melt containing up to 80% of Ti can be obtained through electrolysis of $TiCl_4$ in a fused mixture of $AlCl_3$ + NaCl.

M.M.

1. Titanium chlorides--Electrolysis 2. Metal chlorides--Applications
3. Electrolytic cells--Materials 4. Electrolytic cells--Performance

Card 2/2

82615
S/180/60/000/004/003/027
E111/E452

18.3100

AUTHORS: Gopiyenko, V.G. and Ivanov, A.I. (Leningrad)

TITLE: Electrolysis of Titanium Tetrachloride in Fused Chlorides

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1960, No.4, pp. 15-25

TEXT: The authors have been working on titanium production by electrolysis of chloride-salt melts since 1954. They describe experiments with different electro[illegible]es, electrode positions and materials for electrodes and other electrolyser parts, designed to produce cathodic deposits with over 90% Ti. Preliminary experiments were carried out in a laboratory electrolyser (current intensity up to 20 to 50 amp) in KCl-LiCl, KCl-NaCl, KCl-NaCl-$MgCl_2$, KCl-$MgCl_2$, $CaCl_2$-$BaCl_2$-NaCl and $AlCl_3$-NaCl melts at 130 to 760°C, with current densities of 0.3 to 17.5 amp/cm^2; 3 to 99% Ti deposits were obtained (Table 1). Results obtained with vertical and with horizontal electrodes did not differ appreciably. Of the tested solid cathodes (types 3 and 1Kh18N9T steel, titanium, molybdenum, tungsten and copper) only copper differed in its

Card 1/3

82615
S/180/60/000/004/003/027
E111/E452

Electrolysis of Titanium Tetrachloride in Fused Chlorides

effect. Various fused metal and alloy cathodes were tried: the titanium obtained failed to dissolve but floated on the electrode surface (Table 2 gives electrode and deposit compositions) even with stirring. Laboratory experiments in a larger electrolyser at 500 to 1500 amp in general confirmed the small-scale work. Fig.2 shows a variant with vertical electrodes which gave better results than a horizontal arrangement. Fig.3 shows an unusual adherence of deposit to the cathode. Electrolyte compositions, electrolysis conditions and results are given in Table 3. A total of 30 kg titanium was obtained on this electrolyser in 1955; from the best deposits ingots were vacuum induction melted. The resulting titanium contained titanium-carbide inclusions. The best results were obtained with a KCl-NaCl-2%$MgCl_2$ melt (0 to 80% KCl and NaCl) at 650 to 750°C and a cathodic current density of 0.3 to 5.0 amp/cm^2; or with 30% $CaCl_2$-25%$BaCl_2$-45%NaCl at 600 to 750°C and a current density of 1.0 to 5.0 amp/cm^2. The cathodic metal contained 92 to 99% Ti and was contaminated with Fe, Si, Al, C, H and other impurities,

Card 2/3

Electrolysis of Titanium Tetrachloride in Fused Chlorides

but the oxygen, nitrogen, hydrogen and carbon contents were sometimes below specifications. This indicates that metal of sufficient purity can be obtained electrolytically. The authors conclude with a review of the present state of work, mainly outside the USSR, on the electrolysis of titanium tetrachloride. There are 3 figures, 3 tables and 25 references: 7 Soviet, 10 English, 2 Japanese, 1 French and 5 German.

SUBMITTED: April 30, 1960

Card 3/3

S/080/60/033/011/012/014
A003/A001

AUTHOR: Gopiyenko, V. G.

TITLE: The Production of Titanium Di- and Trichloride

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol. 33, No. 11, pp. 2600-2603

TEXT: Several methods are known for obtaining $TiCl_3$ (Refs. 1-14) and $TiCl_2$ (Refs. 12, 13, 15, 16). Most of these methods are based on the reduction of titanium tetrachloride by hydrogen. In the most favorable case $TiCl_3$ with a purity of up to 98% is obtained. Experiments were made on the simultaneous production of pure titanium di- and trichlorides based on the reaction: $Ti + TiCl_4 \rightarrow TiCl_2 + TiCl_3$. The experiments were made in a steel retort, from which the air was evacuated. It was filled with argon and heated to 700-1,070°C. Liquid $TiCl_4$ was supplied through a porcelain pipe onto titanium metal in the retort. It was found that $TiCl_3$ is formed at all temperatures in large amounts. The optimum conditions for the highest yield are 900°C and a $TiCl_4$ pressure of 0.3-0.4 atm. At a temperature below 900°C $TiCl_2$ could not be detected. The optimum temperature for the formation of $TiCl_2$ is 1,040°C, the $TiCl_4$ pressure 0.2-0.5 atm. $TiCl_2$ obtained in the experiments is a dense heavy product of black color with a violet

Card 1/2

shade, crystallizing in hexagonal crystals of 3-5 mm. Its melting temperature is 1,033°C, the specific gravity is 3.15 g/cm^3. It does not fume in the air, but quickly becomes moist. It vigorously dissolves in water under liberation of hydrogen. $TiCl_3$ was obtained in two types: at 700°C semitransparent bright violet crystal scales were obtained, fuming in the air; at 900-1,070°C a dense mass of small red-violet crystals was obtained, almost not fuming in the air. $TiCl_3$ sublimates at 700-720°C without melting. Its specific gravity is 2.7 g/cm^3. The loose weight of $TiCl_3$ produced at 700°C is 0.2-0.4, for $TiCl_3$ produced at 900-1,070°C it is 1.2-1.3 g/cm^3. Roentgenographic investigations have shown a rhombohedral structure with the lattice parameters: α = 6.12 A, c = 17.50 A. There are 2 tables, 1 figure and 21 references: 5 Soviet, 9 German, 2 American, 2 Japanese, 2 English, 1 Italian.

SUBMITTED: March 22, 1960

Card 2/2

S/598/61/000/006/026/034
D245/D303

AUTHOR: Gopiyenko, V.G.

TITLE: Preparing an electrolyte for refining titanium

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego splavy. no. 6, 1961. Metallotermiya i elektrokhimiya titana, 194 - 202

TEXT: The author studied experimentally techniques for preparing suitable electrolytes for Ti refining, based on the reduction of $TiCl_4$ with waste Ti sponge charged in a reactor with NaCl or NaCl and KCl, the process taking place at a relatively low temperature (about 600°C). The chief drawback of previous techniques applied is the high temperature which results in deterioration of the apparatus. The experiments were carried out in a large-scale laboratory apparatus. A feed rate of 20 - 50 g $TiCl_4$ per hour was used. The degree of utilization of the initial Ti fed into the process reached 90 - 95 %. The techniques studied enabled very fine Ti waste dusts to be used. These were previously sintered or compressed. The

Card 1/2

Preparing an electrolyte for ...

impurities in the initial Ti were concentrated in the unreacted metal of which the approximate composition was: 70 - 80 % Ti, 3 - 12 % Fe, 0.8 - 3.0 % Si, and over 2 % O. It was found generally advisable to prepare the electrolyte mixture before charging it in the reactor, although separate feed of NaCl and a concentrated melt of lower Ti chlorides had certain advantages. The composition of the melts obtained is fairly homogeneous and is characterized by high concentration of lower Ti chlorides ($TiCl_2$ content is 5 - 25 %). The method can also be used to prepare $TiCl_3$ - NaCl catalysts for the polymerization of unsaturated hydrocarbons, and for subsequent reduction of lower chlorides to metal; the chief advantage of the techniques is the substantially lower temperature of operation. There are 4 figures, 2 tables and 8 references: 4 Soviet-bloc and 4 non-Soviet-bloc. The references to the English-language publications read as follows: R. Deap, Metal Industry, 1957, v. 90, no. 8, 143 - 146, no. 9, 165 - 167, no. 10, 193 - 194; J. Nettle, D. Baker, F. Wartman, U.S. Bur. Mines Rep. Invest. 1957, 5315; K. Komarek, P.Herasimenko, J. Electrochemic. Soc., 1958, v. 105, no. 4, 216 - 224.

Card 2/2

18.3100

S/598/61/000/006/027/034
D245/D303

AUTHORS: Ivanov, A.I., Gopiyenko, V.G., and Pichukov, A.P.

TITLE: Electrolytic cell designs with poured anode for refining titanium

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego splavy. no. 6, 1961. Metallotermiya i elektrokhimiya titana, 203 - 210

TEXT: The authors studied four types of electrolytic cell for refining Ti sponge and alloy wastes, in which the anode can be formed by pouring or by compaction namely (1) cylindrical (2) lamellar (3) disc-cathode, (4) drum type. The cells were lined with the usual refractory materials and were provided with internal heating. 1) With a cylindrical type cell, the vessel was made of stainless steel and its dimensions were: 125 mm diameter and 400 mm height. A cylindrical compartment was welded to the upper part of the vessel and contained a cylindrical vessel rotating on an axis and having a vertical wall height of 150 mm. The container was sectional

Card 1/3

Electrolytic cell designs with ...

to ensure separation of cathode residues. The cathode was stainless steel rod of 14 mm diameter, the anode had an internal diameter of 80 mm. The design had the following advantages: Satisfactory hermetic sealing was possible; cathode residues were easily removed; no difficulties were experienced with the anode unit in operation despite a metal screen of insufficient strength; satisfactory discharge of the electrolyte with slurries; high degree of utilization of the volume of the vessel and high volumetric density (up to 75 amp/l.). 2) This design was characterized by a rectangular section of the bath, laminar cathode and flat anodes. Internal bath dimensions were: Length, 320 mm, height 500 mm, width 180 mm. The anode can be poured or compacted. The chief advantage of this design, as compared with (1) is the ease and simplicity with which it can be developed into a continuous, multiple-cell apparatus. 3) The disc-type apparatus is similar to (2) but had a rotating disc cathode of continuous or periodic motion. The disc shaft acts as current lead. The lower part of the disc was immersed in the melt between two flat anodes which consisted of containers filled with Ti wastes. Direct current was led into the anode through the

Card 2/3

housing of the cell. The advantages of this type are stated to be: Possibility of continuous or periodic action, of operation with minimum electrode distances, general technical stability, ease of adjustment. 4) The drum-type cell was a continuous 200 - 1000 amp. apparatus with horizontal electrode arrangement. The metal to be refined was poured to form a layer on the cylindrical bases of the housing of the cell which functioned as anode. Above the anode, the drum was arranged on a shaft. The main drawback of cells with vertical electrode arrangement is the need to use an anode container with a perforator or screened side towards the cathode. Replacement of the screen necessitates periodic interruption of the process. The authors consider types (2) and (3) to be of the greatest interest from the point of view of organizing Ti refining on a large scale. Types (1) and (2) have the disadvantage that the cell uses a large volume space for the cathode and the mechanisms for moving the cathode. In type (3) the gas volu[illegible] of the apparatus is much lower. There are 5 figures and 4 refe[illegible]nces: 3 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: O. Leone, J. Nettle, D. Baker, Bur.Mines Rept. Invest., 5494, 1959.

Card 3/3

S/149/63/000/001/004/008
A006/A101

AUTHOR: Gopiyenko, V. G.

TITLE: On the interaction between titanium tetrachloride and titanium metal in the presence of alkali and alkali-earth metal chlorides

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, no. 1, 1963, 110 - 116

TEXT: The author studied the effect of various factors on the composition of reaction products between $TiCl_4$ and titanium metal in the presence of solid and molten chlorides of alkali and alkali-earth metals. The experiments were made in three series: 1) with continuous removal of the liquid phase, 2) without removal of the liquid phase in the presence of solid chloride salts and 3) in molten chloride salts. The initial chloride salts LiCl, NaCl, KCl, $CaCl_2$, $BaCl_2$ and $SrCl_2$ were dried, roasted and remelted. The Mg chloride contained 99.5% $MgCl_2$. The titanium metal was Ti-sponge containing 99.2 - 99.5% Ti. The laboratory tests show that the formation of $TiCl_3$ solutions is the initial macro-

process of $TiCl_4$ interaction with Ti metal in the presence of solid and molten chlorides of alkali metals. Crystal-optic investigations, performed with sodium chloride, show that initially formed $TiCl_3$ is bound into complex compounds with alkali metal chlorides. The ratio $Ti^{3+} : \sum Ti$, characteristic of $TiCl_3$ activity in the melts, is not equal in different chlorides of alkali and alkali-earth metals. Although a strict correlation for individual chlorides was not experimentally established, a higher Ti^{3+} : Ti ratio was however observed; this indicates the formation of stronger complex compounds. Under the conditions investigated during continuous removal of the liquid phase and rapid cooling of the reaction products after the experiment, alkali metal chloride melts can be obtained which contain practically merely titanium trichloride. This article was recommended for publication by the kafedra elektropiro-metallurgii tsvetnykh metallov Leningradskogo politekhnicheskogo instituta (Department of Electropyrometallurgy of Non-Ferrous Metals at the Leningrad Polytechnic Institute). There are 5 tables and 2 figures.

ASSOCIATION: Vsesoyuznyy alyuminiyevo-magniyevyy institut (All-Union Aluminum-Magnesium Institute)

SUBMITTED: May 28, 1962

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000516020009-8"

L 12651-63 EWP(q)/BDS/EWT(m) AFFTC/ASD JD

ACCESSION NR: AP3002695 S/0080/63/036/005/0963/0968

AUTHOR: Gopiyenko, V. G. 53

TITLE: Reaction of titanium tetrachloride with various Ti-containing and certain other materials in the presence of solid chlorides of alkali metals

SOURCE: Zhurnal prikladnoy khimii, v. 36, no. 5, 1963, 963-968

TOPIC TAGS: titanium tetrachloride, titanium, molybdenum, aluminum, vanadium, chromium, sodium chloride

ABSTRACT: Research in this area is of interest in studying the behavior of possible components of titanium scrap and also to determine the prospects of using them as reducing agents of $TiCl_4$. The speed of processing for all alloys is found to be approximately the same. Molybdenum and tin in fusion are not converted, aluminum converts at 20-60%, vanadium at 10-20%, chromium at 35%, manganese at approximately 35%. Best results were obtained with use of chlorine. The basic product of the reaction is solution of titanium tetrachloride in molten sodium chloride. Crystal-optical analysis of the fusion indicates initially a formation of Na_3TiCl_6. Chlorination of waste products of titanium by chlorine

Card 1/2

L 12651-63
ACCESSION NR: AP3002695

0

is characterized by approximately the same technological properties as in the case of $TiCl_4$ (rate of processing, composition and purity of fusion, etc.). Orig. art. has: 4 tables.

ASSOCIATION: none

SUBMITTED: 05Apr62 DATE ACQ: 24Jul63 ENCL: 00

SUB CODE: CH, ML NO REF SOV: 009 OTHER: 007

Card 2/2

GOPIYENKO, V.G.

Equilibrium between metallic titanium and its chlorides in molten sodium chloride. Titan i ego splavy no.9:205-212 '63.
(MIRA 16:9)

(Titanium--Metallurgy)
(Vapor-liquid equilibrium)

L 21132-66 EWT(l)/EWT(m)/ETC(f)/EPF(n)-2/EWG(m)/T/EWP(t) LIP(c) JD/AT
ACC NR: AP6011014 SOURCE CODE: UR/0080/66/039/003/0577/0584

AUTHOR: Gopiyenko, V. G.; Anufriyeva, N. I.; Klyuchnikova, Ye. F. 42 B

ORG: none

TITLE: Cathode crystallization during titanium purification in melted salts 27 18

SOURCE: Zhurnal prikladnoy khimii, v. 39, no. 3, 1966, 577-584

TOPIC TAGS: titanium, metal purification, electrocrystallization, chloride, electrolyte, electrolysis, titanium electrocrystallization

ABSTRACT: In studying the electrocrystallization of titanium from melts and development of electrolytic methods of preparing and refining titanium, it has been determined that titanium crystallizes at the cathode at temperatures of 700 to 900C in five basic crystal forms, namely, needle-shaped, prismatic, laminar, octahedral, and finely disperse. A marked growth and further development of forms in crystal grains was observed at temperatures of 700 to 850C. Cathode metals of various coarseness (except for the 0.25 mm size) are basically of identical shape but differ in sizes of crystals. The effects of the concentrations of titanium chlorides in the electrolyte, duration of electrolysis, process temperatures, and impurities of certain salts in the electrolyte on titanium electrocrystallization are shown.

Card 1/2 UDC: 621.357.9+546.821

L 24132-66
ACC NR: AP6011014 O

Orig. art. has: 7 figures. [Based on author's conclusions] [NT]

SUB CODE: 07/ SUBM DATE: 17Jul64/ ORIG REF: 004/ OTH REF: 004/

Card 2/2 BK

GOPKA, V.V. [Hopka, V.V.], inzh.

Table [redacted] for composing liquid mixed feeds. Mekh. sil'. hosp. 13 no.7:16-17 Jl '62. (MIRA 17:3)

1. Zaporozhskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta elektrifikatsii sel'skogo khozyaystva.

GOPKA, V.V.

Electric feed bin. Sbor. nauch.-tekh. inform. po elektr. sel'khoz. no.16/17:29-30 '64. (MIRA 18:11)

KLYUYEV, G.M., kand.tekhn.nauk; YUNITSKAYA, Ye.I., starshiy inzh.; RYAKOVA, E.Ya.; Prinimali uchastiye: PETROV, A.M.,; SHISHKIN, A.F.; KNAUS, O.M.; RUSAKOVA, R.A.; STEPANOVA, L.G.; KALINKIN, V.F.; GOPKALOVA, N.K.; SACHKOV, V.F.; FROLOV, M.F.; LUKASHOVA, T.T.; SAVKIN, P.S.

Grain-size distribution in the material produced by crushing rock. Sbor. trud. NIIZHelezobetona no.3:69-90 '60. (MIRA 15:2)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut zhelezobetonnykh izdelii, stroitel'nykh i nerudnykh materialov (for Petrov, Shishkin, Knaus, Rusakova, Stepanova, Kalinkin, Gopkalova, Sachkov, Frolov, Lukashova, Savkin).

(Stone, Crushed)

UVAROV, G.A., kand.tekhn.nauk; SHESTAKOV, B.I., kand.tekhn.nauk; FEDOROV, V.N., inzh.; GOPKO, M.K., inzh.; ANDREYEV, G.B., inzh. ORLOV, A.V., inzh.

Simultaneous burning of anthracite culm and gas with different methods for supplying the gas to the furnace. Teploenergetika 8 no.4:52-57 Ap '61. (MIRA 14:8)

1. Kuybyshevskiy industrial'nyy institut i Kuybyshevenergo. (Furnaces)

GOPKO, V.F.; GORENBEYN, A.Ye.

For a cooperation between the textile and clothing industry of Transcaucasia. Tekst. prom. 25 no.10:8-9 O '65.
(MIRA 18:10)

1. Zamestitel' predsedatelya Planovoy Komissii Zakavkazskogo ekonomicheskogo rayona (for Gopko). 2. Vedushchiy inzh. Tbilisskogo nauchno-issledovatel'skogo instituta tekstil'noy promyshlennosti (for Gorenbeyn).

GOPMAN, L.M.

GOL'DSHTEYN, Ya.Ye., kand.tekhn.nauk; LYAKHOVICH, L.S., kand.tekhn.nauk; PYATAKOVA, L.L., inzh.; TRUSENEV, G.M., inzh.; OKUNEVA, A.I., inzh., vedushchiy red.; GOPMAN, L.M., inzh., red.; PONOMAREV, tekhn.red.

[Boron additives for microalloying of 45 steel] Mikrolegirovanie stali 45 dobavkoi bora. Moskva, Filial Vses.in-ta nauchnoi i tekhn. inform., 1956. 13 p. (Informatsiia o nauchno-issledovatel'skikh rabotakh. Tema 1, no.I-56-217) (MIRA 11:1)
(Boron steel)

OL'SHANSKAYA, I.V., inzh., ved. red.; GOFMAN, L.M., inzh., red.;
SOROKINA, T.M., tekhn. red.

[Steelmaking in machine manufacturing plants]Staleplavil'noe proizvodstvo na mashinostroitel'nykh zavodakh. Moskva, Filial Vses. in-ta nauchn. i tekhn. informatsii. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 1. No.M-58-37/2) No.1. 1958. 14 p. (MIRA 16:3)
(Steel--Metallurgy) (Machinery industry)

MAKEYEV, Igor' Mikhaylovich; SAMOKHOTSKIY, A.I., inzh., ved. red.; GOPMAN, L.M., red.; SOROKINA, T.M., tekhn. red.

[Improved design of steel pouring ladles] Usovershenstvovanie konstruktsii stalerazlivochnykh kovshei. Moskva, Filial Vses. in-ta nauchn. i tekhn. informatsii, 1958. 27 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 1. No.M-58-263/5) (MIRA 16:3)
(Open-hearth furnaces--Equipment and supplies)

GOPMAN, L.M., inzh.

Saving of nickel in the national economy. Metalloved. i term. obr. met. no.10:60-64 3 of cover 0 '61. (MIRA 14:10)
(Nickel)

GOPMAN, Petr Yefimovich; BEREZIN, Vitaliy Borisovich; KHAYKIN, Aron Moiseyevich; ZIL'BERSHEYD, M.M., red.; LARIONOV, G.Ye., tekhn. red.

[Electrical engineering materials; a handbook] Elektrotekhnicheskie materialy; spravochnik. Moskva, Izd-vo "Energiia," 1964. 351 p. (MIRA 17:3)

GOPNER, S., chlen Kommunisticheskoy partii Sovetskogo Soyuza s 1903 goda

"Sixty-five years in the ranks of Lenin's party" by F.N. Petrov. Reviewed by S. Gopner. Nauka i zhizn' 29 no.12:80 D '62. (MIRA 16:3)

(Russia--History) (Petrov, F.N.)

GOPNIK, B., inzhener.

Mechanizing tire repair work. Avt.transp. 32 no.8:22-23 Ag '54.
(MLRA 7:11)

1. Upravlyayushchiy trestom "Rosremshina".
(Tires, Rubber--Repairing)

GOPNIK, B.

Is it necessary to overhaul motor vehicles? Avt.transp. 38 no.2: 32 F '60. (MIRA 13:6)
(Motor vehicles--Maintenance and repair)

USSR / Plant Physiology. Respiration and Metabolism. I-1

Abs Jour : Ref Zhur - biol., No 22, 1958, No 99899

Author : Gopanenkoni, T. K.
Inst : Voronezh Agricultural Institute
Title : On the Biosynthesis of Pectins in Plants.

Orig Pub : Biokhimiya, 22, No 3, 565-567, 1957

Abstract : The content of pectins in plants of the sugar beet during various stages of their growth and development was determined according to the amount of galacturonic acid (GA) in alcohol and water solutions. This includes also a detailed description of the methods and procedures of the analysis of the various forms of pectins. GA formed in the assimilating organs, whence it migrated to the root. The content of GA is higher in the varieties with a lower saccharinity. During the stage of the intensive formation

Card 1/2

USSR / Plant Physiology. Respiration and Metabolism. I-1

Abs Jour : Ref Zhur - Biol., No 22, 1958, No 99899

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of saccharose and its accumulation in the root, the GA content remained stable. In this connection, the free GA and the acid of water soluble pectin became transformed into protopectin. The study was executed in the Voronezh Agricultural Institute. --- S. S. Chernyshova.

Card 2/2

GOPP, Yu. A.

GOPP, Yu. A. -- "Applied Theory of Nonlinear Vibrations of Mechanical System." Sub 9 Apr 52, Inst of Machine Science, Acad Sci USSR (Dissertation for the Degree of Doctor in Technical Sciences)

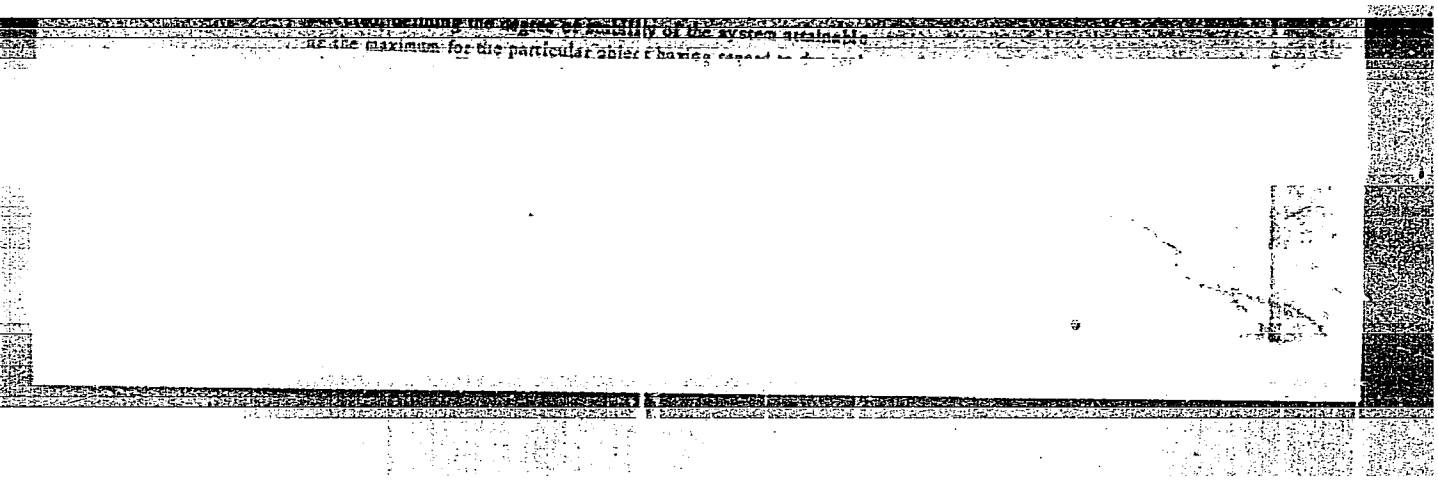
SO: Vechernaya Moskva January-December 1952

GOPP, YU. A.

"Selection of Optimum Parameters of a System of Direct Regulation", Avtomatika i Telemekhanika, Vol 14, No 6, 1953, pp 729-732.

The line of minimum values of the amplitude of oscillations is plotted for a linear system of third order in the plane of certain parameters. This line is compared to the line of maximum values of the degree of stability (in the field of oscillatory processes). (RZhMekh, No 11, 1954)
SO: Sum. No. 443, 5 Apr. 55

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000516020009-8"



GOPP, Yu.A.

Investigation of degenerate systems in indirect control units by means of I.A.Vyshnegradskii's detailed diagram. Trudy Sem. po teor.mash. 14 no.55:71-78 '54. (MLRA 8:1)
(Governors (Machinery))

GOPP, Yu. A.

"Linearization of Positional Force by the Method of Fragmentary-Linear Approximations" (Differential Equations, Applications to Physics, Technology and Natural Science) Inzh. sb., Vol 18, 1954, pp 149-152

Abs

W-31146, 1 Feb 55

SOV/124-57-4-3904

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 4, p 9 (USSR)

AUTHOR: Gopp, Yu. A.

TITLE: Approximate Methods for the Investigation of Oscillations in Complex Autonomous Systems (Priblizhennyye metody issledovaniya kolebaniy v slozhnykh avtonomnykh sistemakh)

PERIODICAL: V sb.: Kolebaniya v turbomashinakh. Moscow, AN SSSR, 1956, pp 179-190

ABSTRACT: The author examines an autonomous chain system consisting of n concentrated masses, the oscillation of which generates external and internal friction forces that are assumed to be small in comparison with the restoring forces. For the case when the oscillations of such a system are linear and can be described by differential equations of the type of

$$m\ddot{x}_j + \Delta_j\dot{x}_j + \Delta_{j-1,\,j}(\dot{x}_j - \dot{x}_{j-1}) + \Delta_{j,\,j+1}(\dot{x}_j - \dot{x}_{j+1}) +$$

$$+ k_{j-1,\,j}(x_j - x_{j-1}) + k_{j,\,j+1}(x_j - x_{j+1}) = 0 \quad (j = 1, \ldots, n)$$

Card 1/2

Approximate Methods for the Investigation of Oscillations in Complex (cont.)

the author recommends an approximate method for the determination of the roots of the characteristic equation with an accuracy of up to the square of a certain small parameter. This method leads to the calculation of the real roots of an equation which is lower by one-half of the power of the characteristic equation and to a subsequent computational scheme which does not require any evaluation of determinants. Starting from this method of the investigation of linear oscillations the author indicates a general path for the approximate calculation of the principal vibrational characteristics (frequencies and damping) for the case when the oscillations of an autonomous chain system with low friction are nonlinear.

I. M. Volk

Card 2/2

SOV/124-57-8-8634

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 8, p 9 (USSR)

AUTHOR: Gopp, Yu. A.

TITLE: Calculation of the Forced Oscillations of Chain Systems With Friction (Raschet vynuzhdennykh kolebaniy tsepnykh sistem s uchetom treniya)

PERIODICAL: V sb.: Kolebaniya v turbomashinakh. Moscow, AN SSSR, 1956, pp 191-205

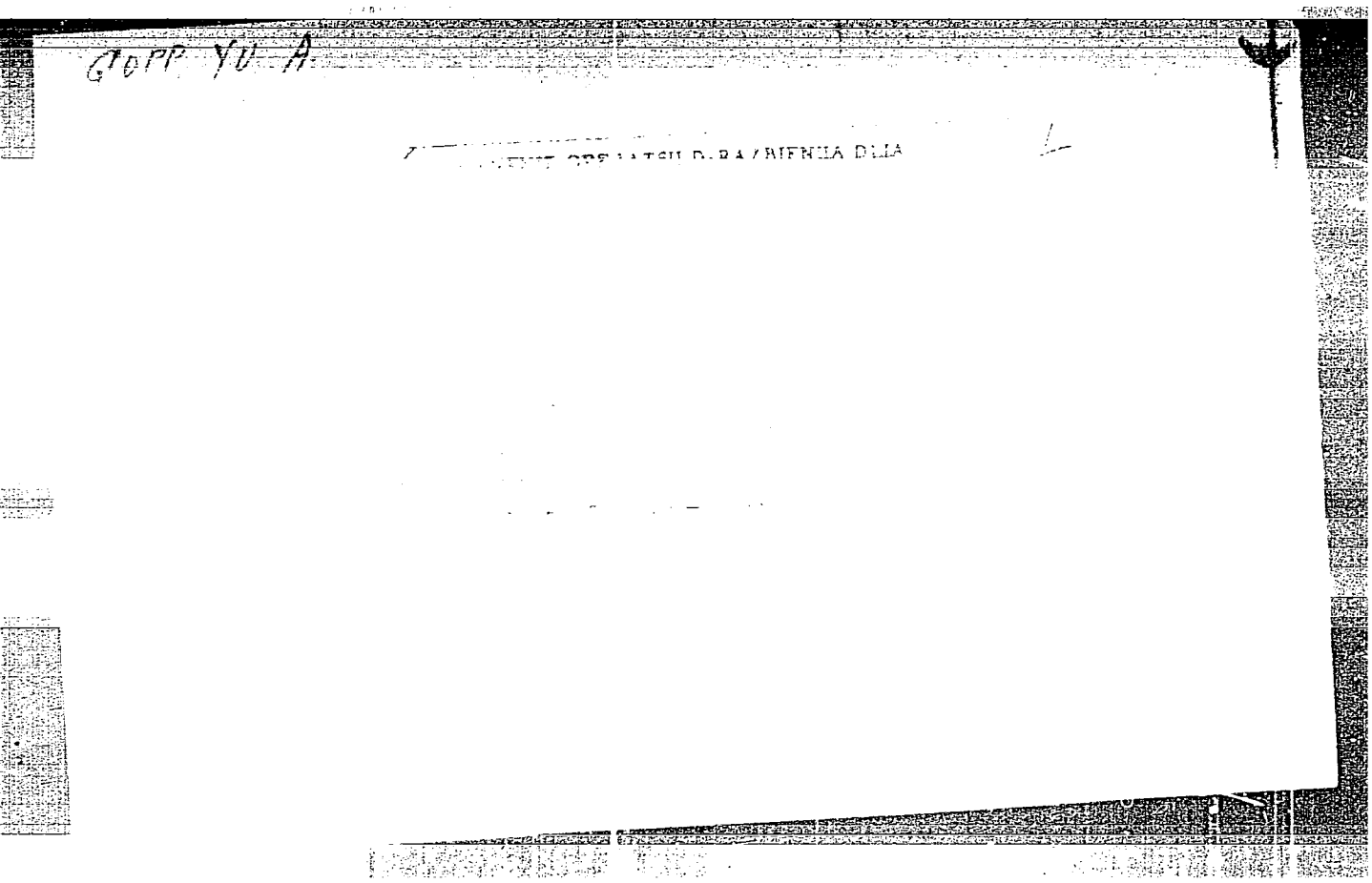
ABSTRACT: The author proposes a method for the determination of the amplitudes of forced oscillations of a chain system (comprising friction forces that are proportional to the first power of the relative velocities); the method is based on the direct evaluation of the determinants in terms of which the solution is expressed. This evaluation is substantially simplified if use is made of the recurrent relationships proposed in the paper, whereby the determinant under evaluation can be reduced to a determinant of lower order. The method is applicable not only to simple chains (cascade connection of masses) but to a branched system as well. The formulas are simplified if the friction forces are accounted for with approximation (i. e., if only the terms

Calculation of the Forced Oscillations of Chain Systems With Friction

containing the first power of the friction parameter are retained). The author provides an estimate of the number of operations required for the performance of a calculation according to various calculation procedures. This correlation indicates the great economy in computational labor that can be achieved through application of the proposed calculation method.

A. I. Lur'ye

Card 2/2



GOPP, Yu.A., doktor tekhn.nauk, prof.

I.A. Vyshnegradskii's detailed diagram for systems of direct control with P.L. Chebyshev's sensitive elements. Trudy OMI no.1:3-8 '56. (MIRA 11:2)

(Automatic control--Graphic methods)

Z8168

S/145/61/000/005/002/009
D221/D306

13,2000

AUTHOR: Gopp, Yu.A. Doctor of Technical Sciences, Professor

TITLE: Damping of self-oscillations in the auto-pilot system

PERIODICAL: Izvestiya vysshykh uchebnykh zavedeniy. Mashinostroyeniye, no. 5, 1961, 26 - 32

TEXT: Fig. 1 illustrates the diagrammatic arrangement of the auto-pilot as described by B.V. Bulgakov (Ref. 2: Prikladnaya matematika i mekhanika, v. 10, no. 3, 1946). The servodrive is non-linear and function $\xi = F(\sigma)$ is linearized by the method of harmonic balance, according to L.S. Gol'dfarb (Ref. 5: Avtomatika i telemekhanika, v. 8, no. 75, 1947), $\xi = q(A)\sigma$. The dynamics of the system are then expressed by

$$(T_b^2 p^2 + Tap + \beta)\varphi = -\mu + f(t), \quad \sigma = (K_0 + K_1 p + K_2 p^2)\varphi - K_3\mu,$$

$$Ts\ p\ \mu = q(A)\sigma. \qquad (1)$$

Card 1/8

Damping of self-oscillations ...

Assumptions are made in order to transfer to a normalized form, with the result of

$$(\bar{p}^2 + a\bar{p} + 1)\bar{\varphi} = -\mu + f(t),\ \bar{\sigma} = (k_0 + \bar{p} + k_2\bar{p}^2)\bar{\varphi} = \bar{\mu},\ S(A)\bar{p}\bar{\mu} = \sigma \qquad (2)$$

where $k_0 = \frac{k_0}{\beta K_3}$; $k_1 = \frac{K_1}{\sqrt{\beta}\, T_b\, K_3}$; $k_2 = \frac{K_2}{T_b^2\, K_3}$,

and coefficients a, s and s(A) are given by

$$a = \frac{T_a}{\sqrt{\beta}\, T_b}; \qquad s = \frac{\sqrt{\beta}\, T_=}{T_b\, K_3} \qquad (3)$$

and

$$\bar{=}(A) = \frac{s}{q(A)} \qquad (4)$$

Card 2/8

Damping of self-oscillations ...

The transcription of normalized equations reveals that the motion of the system is determined by parameters a and s as well as the coefficients of amplification along the regulated coordinate and its derivative. At first, the parameters are assumed to be independent of the kinematic characteristics, and the curve of D is plotted in the usual manner. In order to evaluate the effect of nonlinearity of the link, it is necessary to include it in the number of elements that are used for division of D. After elaboration, the parametric

$$(z - 1)s^2 - k_1 s - [(1 + k_0)z^{-1} + (1 + k_2)] = 0 \qquad (6)$$

$$a = (z - 1)s - k_1$$

of the curve of D is obtained, and as a result of differentiation, the coordinates of point M (Fig. 2a) are deduced. This presents the limit curve, which together with the straight line s = 0 separates the stability region. Typical graphs of the coefficient of amplification q(A) and parameter s(A) for the servomotor with zones

Card 3/8

Damping of self-oscillations ...

of insensitivity and saturation are shown in Figs. 2b and c. When $a^* > a_M$, then the resulting linear system is stable for any value of s (Fig. 2a). Where $a^* < a_M$ and it is assumed that the time of the linear servometer is s^*, then point N^* is situated in zone P_1. Periodic conditions should have amplitudes that are determined by abscissae of intersection points of curve s(A) with straight lines s_1 and s_2. Self-oscillations with amplitudes A_2 and A_4 are stable. The slope of curve s(A) due to the insensitivity of valve is intensive, and A_1 as well as A_2 are close to $A_o = 1$. The coordinate of the valve pulsates with a small amplitude and at a high frequency even in the steady state. The region of stability in Fig. 3 is filled up by a family of D curves, and the analysis indicates that curves with small values of α are in zones P_1 and P_2, whereas for larger magnitudes of this factor The curves are located in zone I. The discussed method is not limited by the order of the system and does not ignore the important features of non-linear systems. It

Card 4/8

Damping of self-oscillations ...

allows for the slip of object, inaccuracy of differeniators, inertia of amplifiers, etc. The problem of unwanted periodical conditions is considered as part of the general problem of quality in the operation of self-adjusting devices. There are 4 figures [Abstractor's note: Author mentions 5 figures, although only 4 are printed], and 6 Soviet-bloc references.

ASSOCIATION: Omskiy mashinostroitel'nyy institut (Engineering Institute, Omsk)

SUBMITTED: October 7, 1960

Card 5/8

S/141/61/004/002/014/017
E140/E335

16.8000 (1013, 1132, 1068)

AUTHOR: Gopp, Yu.A.

TITLE: The influence of the basic nonlinearities on the operation of a normalised indirect-control system

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1961, Vol. 4, No. 2, pp. 354 - 364

TEXT: In the works of Andronov and his school the effects of dry friction and other nonlinearities in direct and in degenerate indirect control systems are examined by the rigorous method of point transformations of surfaces or by the method of integrable approximations. This programme requires extensive idealisations. An alternative approach grew out of the approximate Krylov-Bogolyubov methods. In the present work the D-separation, introduced by Yu.I. Neymark (Ref. 15 - Avtomatika i telemekhanika, 9, 190, 1948), is combined with the method of harmonic balance to examine a fourth-order normalised indirect control system. The method is used to examine the effects of dry friction, single-valued nonlinearity of the servomotor and multi-valued nonlinearity.

Card 1/2

The influence of ....

S/141/61/004/002/014/017
E140/E335

The method permits hitherto neglected sources of instability and the methods of their suppression to be examined. The effect of dry friction in the sensitive element of an undamped system is to make it small-signal stable and to make an unstable over-damped system oscillatory. Insensitive zones and saturation in the servomotor lead to self-oscillations, which can be suppressed by correct adjustment of the system parameters at any velocity of the servomotor, if the mass of the sensitive element is sufficiently low. Self-oscillations arising through multi-valuedness of the servomotor hysteresis characteristic can also be suppressed by suitable adjustments. These results could not be obtained by a method which neglects the effects of dry and viscous friction. Ye.P. Popov and L.S. Gol'dfarb are mentioned in the paper. There are 7 figures and 19 Soviet-bloc references.

ASSOCIATION: Omskiy mashinostroitel'nyy institut
(Omsk Mechanics Institute)

SUBMITTED: October 12, 1960

Card 2/2

DUEL', M.A., kand. tekhn. nauk; GOPP, A.Yu., inzh.; ZAK, I.D., inzh.; MAR'YENKO, A.F., inzh.; LIBERMAN, A.A., inzh.; SHTEFAN, V.Ye., inzh.

Results of the tests of information input systems of a computer controlling a power system. Energ. i elektrotekh. prom. no.3:7-11 Jl-S '65. (MIRA 18:9)

Country : USSR
Category : Soil Science. Cultivation. Improvement. Erosion. J

Abs Jour : RZhBiol., No 6, 1959, No 24672

Author : Orlovskiy, N. V.; Fesko, K. Ya.; Goppe, G. S.; Strugalova, Ye. V.
Inst : Tomsk University.
Title : Salination of Soils in the Aley Irrigation System and Measures of Prevention and Control Thereof.
Orig Pub : Tr. Tomskogo un-ta, 1957, 140, 82-91

Abstract : The Aley irrigation system is the largest in Altay Kray; its total area consists of 11,000 hectares. The Soil-Improvement Expedition of the Altay Agricultural Institute investigated on the irrigated territory of the Rubtsov Sugar-Beet Collective Farm causes of secondary salina-

Card : 1/3

Country : USSR
Category : Soil Science. Cultivation. Improvement. Erosion. J

Abs Jour : RZhBiol., No 6, 1959, No 24672

Author :
Inst :
Title :

Orig Pub :

Abstract : tion and methods of its control. After 20 years of irrigation, almost the entire territory is in the grip of secondary salination processes of various intensity. The fundamental reason of soil salination are the very costly mineralized subsoil waters. It is recommended: (1) a strict differentiation of irrigation; (2) realization of planned irriga-

Card : 2/3

61

Country : USSR
Category : Soil Science. Cultivation. Improvement. Erosion. J

Abs Jour : RZhBiol., No 6, 1959, No 24672

Author :
Inst :
Title :

Orig Pub :

Abstract : ted fields; (3) measures to reduce water filtration from the canals; (4) creation of a thick structural arable layer, and (5) strengthening the role played by perennial grasses in crop rotation, etc. -- G. B. Zakhar'ina

Card : 2/3

KHAYTOVICH, M., inzh.; GOPTE, Yu., inzh.

Noise and vibration abatement in the double-hull motorship "Otdykh." Rech. transp. 23 no.12:24-25 D '64. (MIRA 18:6)

ZAKHAROV, A.M., kand.tekhn.nauk; GOPPE, Yu.L., inzh.

Efficient systems for air ejectors used with condensers. Rech.transp. 18 no.2:30-31 F '59. (MIRA 12:4)
(Air ejectors) (Condensers (Steam))

GOPFEN, A.A.

Reducing vibrations of light riveting hammers. Mashinostroitel' no.8:40-41 Ag '63. (MIRA 16:10)

GOPPEN, A.A., inzh.

Reducing noise and vibration of hand pneumatic tools. Stroi. i dor. mash. 10 no.6:24-27 Je '65. (MIRA 18:8)

25(6)

S/028/60/000/03/017/029
D041/D006

AUTHOR: Goppen, S.S

TITLE: A Plant Normalization Team

PERIODICAL: Standartizatsiya, 1960, Nr 3, pp 43-44 (USSR)

ABSTRACT: In July 1959 a normalization team was set up in the OKB at the Zavod im. 40 let Oktyabrya Moskovskogo oblastnogo sovnarkhoza (Plant imeni 40 Years of October of the Moscow Oblast' Sovnarkhoz), which produces air-fractionating apparatus for the intensification of technological processes in ferrous and non-ferrous metallurgy. The members of the group studied practical work at the BSN of the Vsesoyuznyy nauchno-issledovatel'skiy instiut kislorodnogo mashinostroyeniya or VNIIKhIMMASh, (All-Union Scientific Research Institute of Oxygen Machine Building) and at several plants. As a result thousands of parts drawings were collected into 24 albums. There are now 537 different fasteners instead of the former 1670 used; "Normali" (plant standards) are issued for

Card 1/2

S/028/60/000/03/017/029
D041/D006

A Plant Normalization Team

production processes. By the beginning of 1960, 40 to 68% of the parts of oxygen plants were standardized or normalized. The design of the unit for production of liquid oxygen and argon was radically changed and requires less brass and copper piping, which will give an estimated annual economy of 20 tons of these metals. There are 640 "normali" for cold and hot-stamped parts, cutting tool and mechanical devices. The work plan of the group for 1960 includes development of seven draft standards for the Komitet standartov, mer i izmeritel'nykh priborov (Committee of Standards, Measures and Measuring Devices). There is 1 table.

Card 2/2

GOPPEN, S.S.

Standardization at the Balashikha Machinery Plant. Standartizatsiia 24 no.12:30-32 D '60. (MIRA 13:11)
(Balashikha--Machinery industry)

GOPPOLDOVA, M.; SMRZ, Z.

Stabilization of ethylized petroleum by inhibitors.
Ropa a uhlie 6 no. 4: 107-111 Ap '64.

1. Chemicke zavody Ceskoslovensko-sovetskeho pratelstvi, Zaluzi.

GOPPOLDOVA, Miluse; DUFEK, Ladislav

Selective hydrogenation of pyrolytic gasoline on the W-Ni catalyst. Ropa a uhlie 7 no.3:74-76 Mr '65.

1. Chemicke zavody Ceskoslovensko-sovetskeho pratelstvi National Enterprise, Zaluzi v Krusnych horach.

GOPPOLDOVA, Miluse; DUFEK, Ladislav; AMBROZ, Otakar

A new oxidation inhibitor for pyrolytic gasoline stabilization. Ropa a uhlie 7 no.4:98-101 Ap '65.

1. Chemicke zavody Ceskoslovensko-sovetskeho pratelstvi National Enterprise, Zaluzi.

GOPSH, K. I.

Osveshchenie promyshlennykh zdanii [Lighting of industrial buildings]
Moskva, Profizdat, 1953. 80 p.

SO: Monthly List of Russian Accessions. Vol. 6 No. 7 October 1953

GOPSH, Kirill Ionovich; NOVOSPASSKIY, V., redaktor; KIRSANOVA, N., tekhnicheskiy redaktor.

[Lighting of industrial buildings.] Osveshchenie promyshlennykh zdanii 2-oe izd., ispr.[Moskva] Izd-vo VTsSPS profizdat, 1954. 77 p. (Electric lighting) (MLRA 8:10)

GOPSH, K. I.; ZOZ, N. I. (Moskva)

Hygienic evaluation of the visual working conditions for inspectors of prepared sera and vaccines. Gig. truda i prof. zab. no.3: 17-20 '62. (MIRA 15:4)

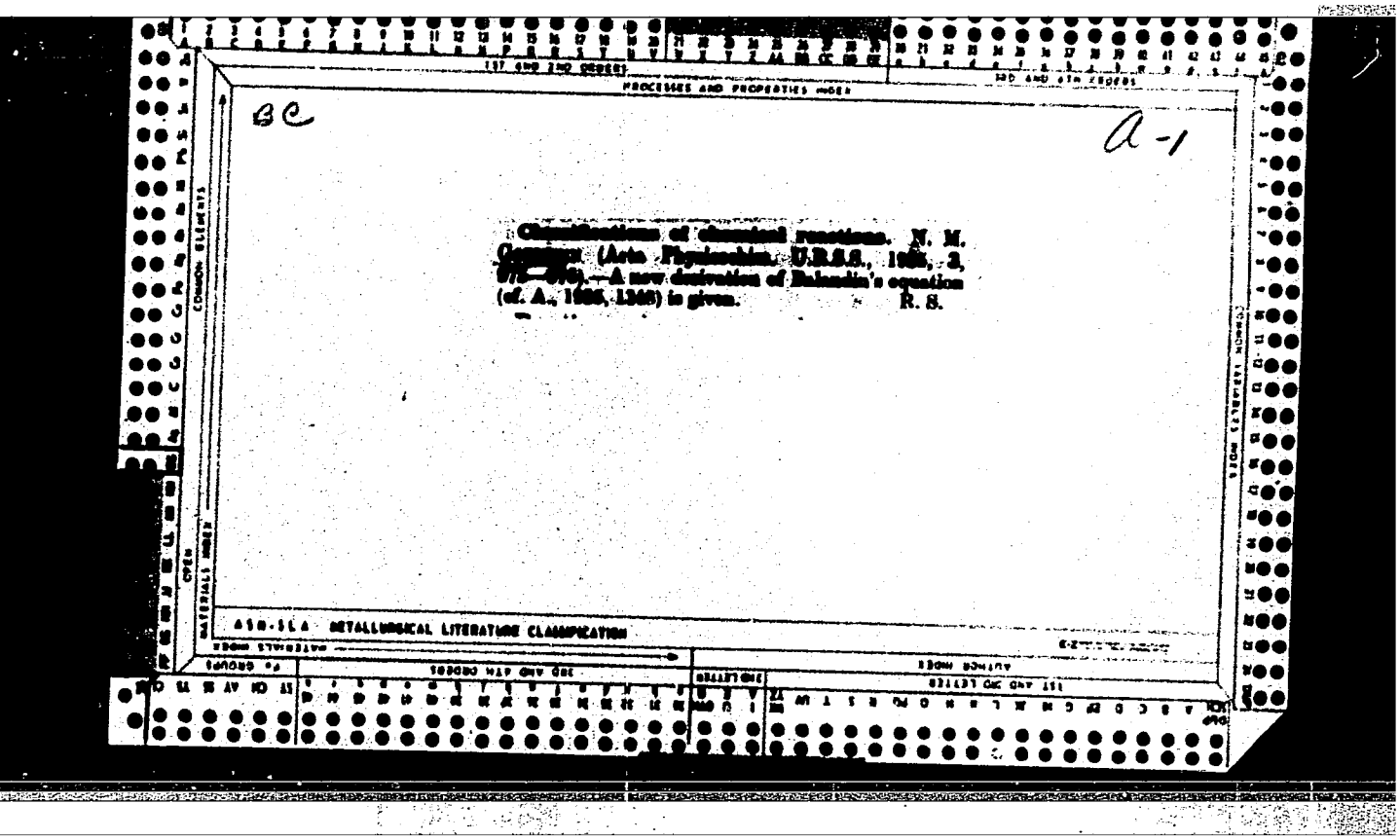
1. Institut gigiyeny truda i profzabolevaniy AMN SSSR.

(INDUSTRIAL HIGIENE) (VACCINES) (SERUM)

GUSINSKAYA, S.L.; GOPSHTEYN, M.A.

Use of resin from wastes of benzene pyrolysis. Uzb.khim.zhur. no.6:93-94 '58. (MIRA 12:2)

1. Sredneaziatskiy gosudarstvennyy universitet im. V.I.Lenina. (Heat--Transmission) (Terphenyl)



1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

BC

A-1

Application of radioactive bromine to the investigation of the mechanism of chemical reactions. S. Roginsky and N. Gopstein (Physikal. Z. Sovietunion, 1935, 7, 672—676).—Org. Br linked to C shows scarcely any interchange with radioactive Br in Br_2, HBr, KBr, or $CuBr_2$. Passage of radioactive Br vapour over heated aq. KBr, or dissolution and subsequent evaporation of radioactive Br from aq. KBr, leads to complete distribution of the activity. At high temp. $HgBr_2$ and $AlBr_3$ show complete interchange of Br with the vapour phase. Heating of $CuBr_2$ containing radioactive Br, to form CuBr, followed by re-conversion into $CuBr_2$ in non-radioactive Br causes < theoretical loss of activity, and after 5 cycles 50% of the activity remains, indicating that the valencies are unequal.

J. W. S.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

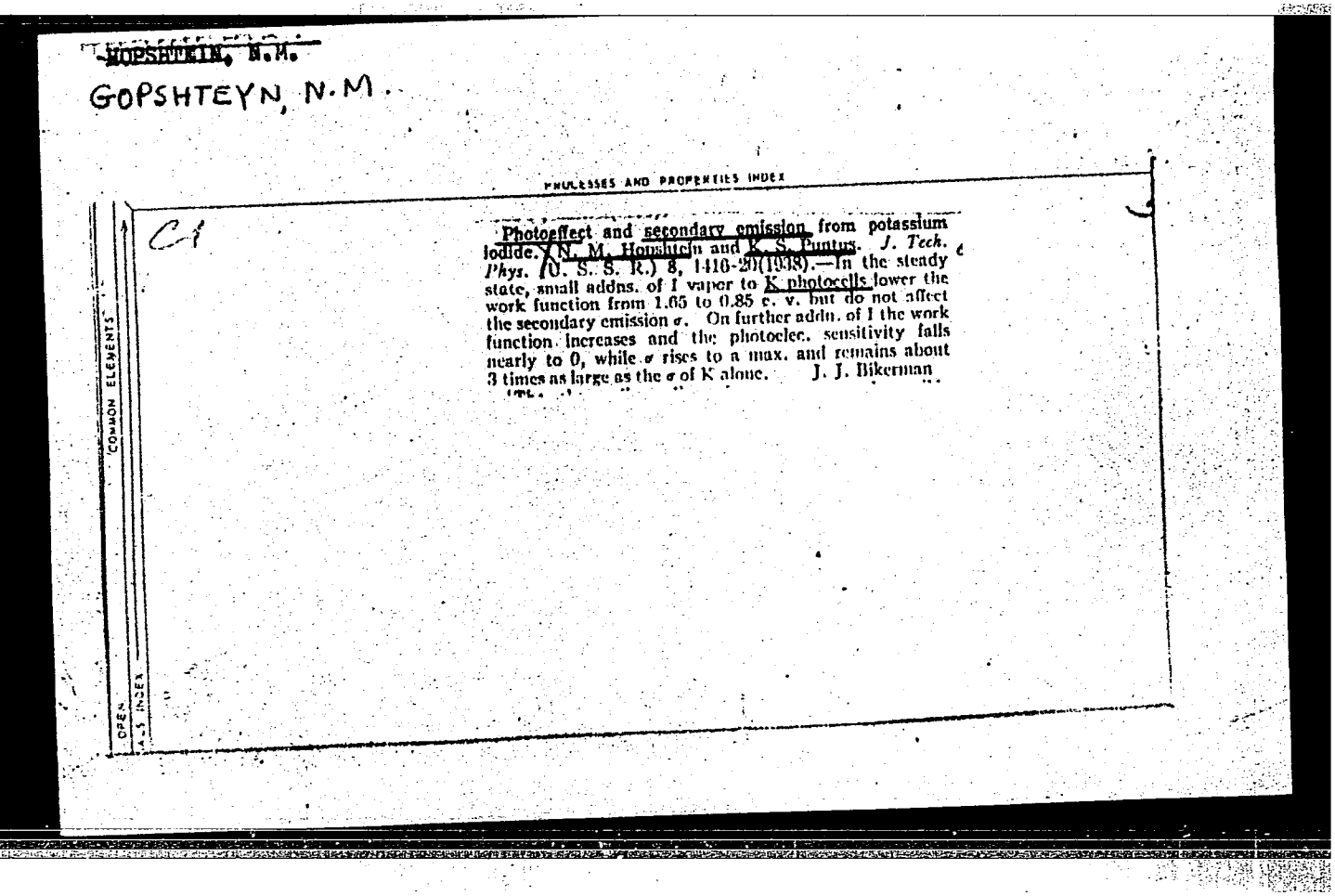
PROCESSES AND PROPERTIES INDEX

ca

2

The possibility of obtaining atoms of sulfur and phosphorus outside of a discharge. N. M. Gopshtein and S. Z. Roginskii. *J. Phys. Chem.* (U. S. S. R.) 7, 587-91 (1936).—The possibility is very slight. Recombination seems to be by way of collisions in the gas phase rather than by a wall reaction. F. H. Rathmann

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



HOPSHTEIN, N.M.

GOPSHTEYN, N.M.

PROCESSES AND PROPERTIES INDEX

C1

COMMON ELEMENTS

OPEN AS INSERT

Photoeffect and secondary emission from potassium iodide. N. M. Hopshtein and K. S. Cuntus. *J. Tech. Phys.* (U. S. S. R.) 8, 1410-20(1938).—In the steady state, small addns. of I vapor to K photocells lower the work function from 1.65 to 0.85 e. v. but do not affect the secondary emission σ. On further addn. of I the work function increases and the photoelec. sensitivity falls nearly to 0, while σ rises to a max. and remains about 3 times as large as the σ of K alone. J. J. Bikerman

HOPSHTEIN, N. M.

GOPSHTEYN, N.M

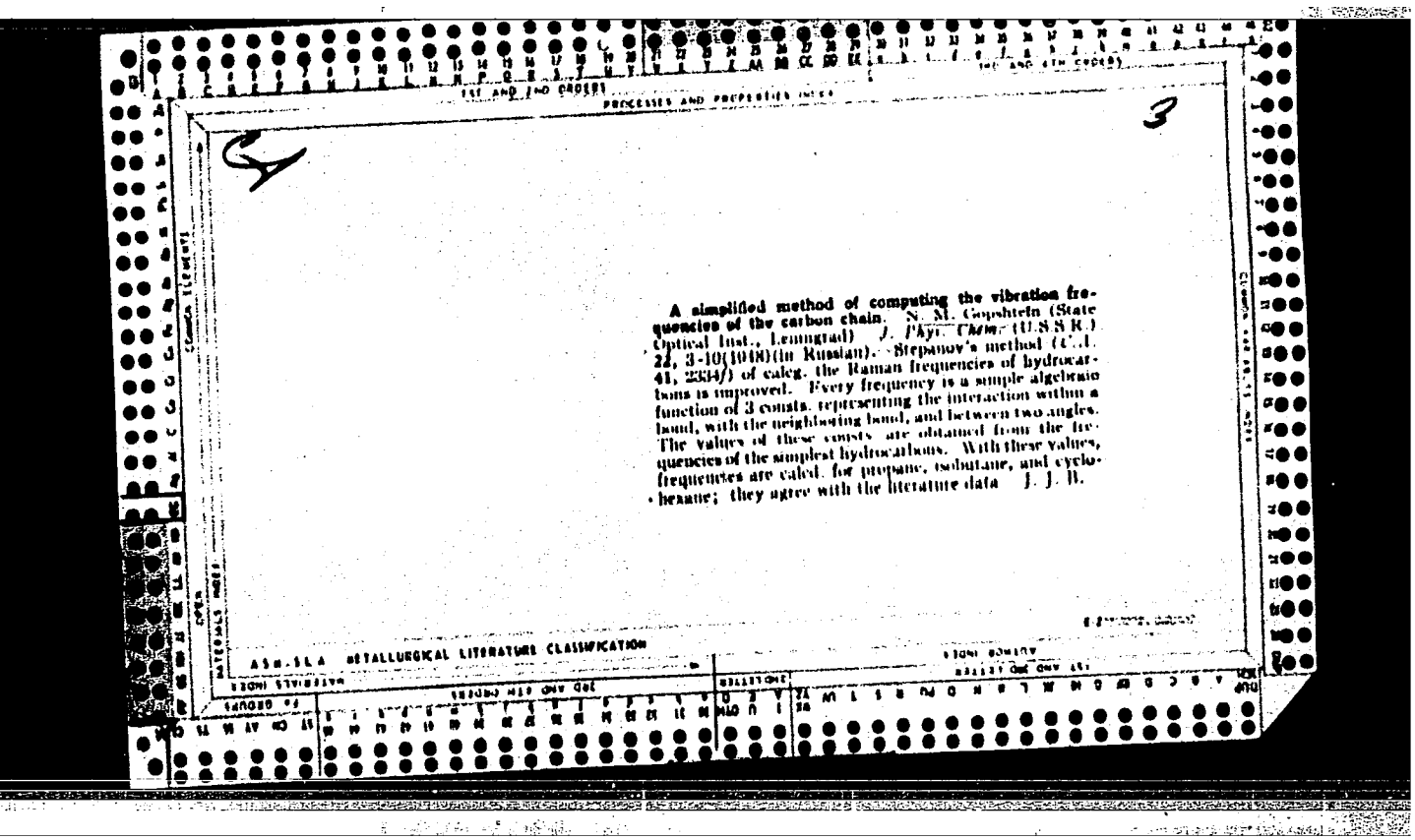
Photoeffect and secondary emission of alloy cathodes. N. M. Hopshtein and D. M. Khorosh. *J. Tech. Phys.* (U. S. S. R.) 8, 2103-6(1938).—Cs alloys were prepd. in photocells by sep. sublimation of the components; their compn. was unknown. The highest sensitivities were for the Sb, As and Bi alloy 70, 40 and 15 microamps. per lumen, resp.; the alloys with P and Te were less sensitive. Some Cs-Sb cathodes were very sensitive but then the current was not proportional to the irradiation. The coeffs. of secondary emission of Sb, As and Bi alloys reached 8, 6 and 3, resp. J. J. Bikerman

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

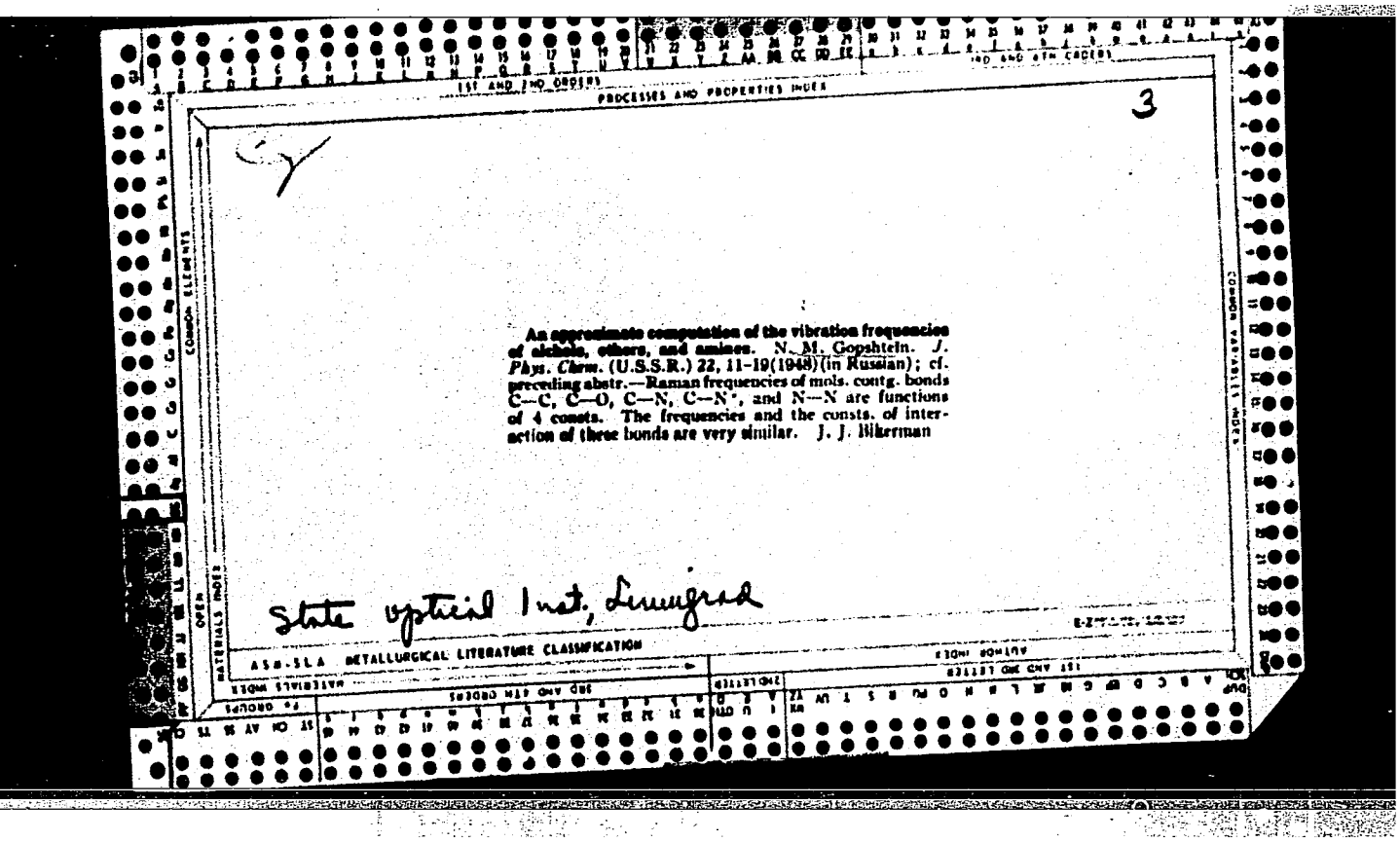
...CHTEYEV, N.M.

Photoelectric method for estimation of zinc content in brass by spectrum analysis. N. M. Hamkin, P. E. Fedos, V. K. Prokof'ev and N. A. Semenchikh. *Doklady Akad. Nauk S. S. S. R.* 43, 65-6(1944); *Compt. rend. acad. sci. U. R. S. S.* 43, 62-4(1944)(in English).—App. for detg. the Zn content of brass is described. An arc is struck between 2 electrodes, one of pure Cu, the other consisting of the brass sample. The light from the arc falls on 2 filters behind each of which a photocell is placed. One filter transmits the green Cu lines, the other the blue Zn lines. The currents of the 2 photocells charge a pair of condensers. The charges which are accumulated are measured with a galvanometer. An empirically established calibration curve is used to convert the ratio of the 2 charges into % of Zn in the sample. J. W. Perry

METALLURGICAL LITERATURE CLASSIFICATION



A simplified method of computing the vibration frequencies of the carbon chain. N. M. Gopshtein (State Optical Inst., Leningrad). *J. Phys. Chem.* (U.S.S.R.) 22, 3-10(1948)(in Russian). Stepanov's method (*C.A.* 41, 2334*f*) of calcg. the Raman frequencies of hydrocarbons is improved. Every frequency is a simple algebraic function of 3 consts. representing the interaction within a bond, with the neighboring bond, and between two angles. The values of these consts. are obtained from the frequencies of the simplest hydrocarbons. With these values, frequencies are calcd. for propane, isobutane, and cyclohexane; they agree with the literature data. J. J. B.



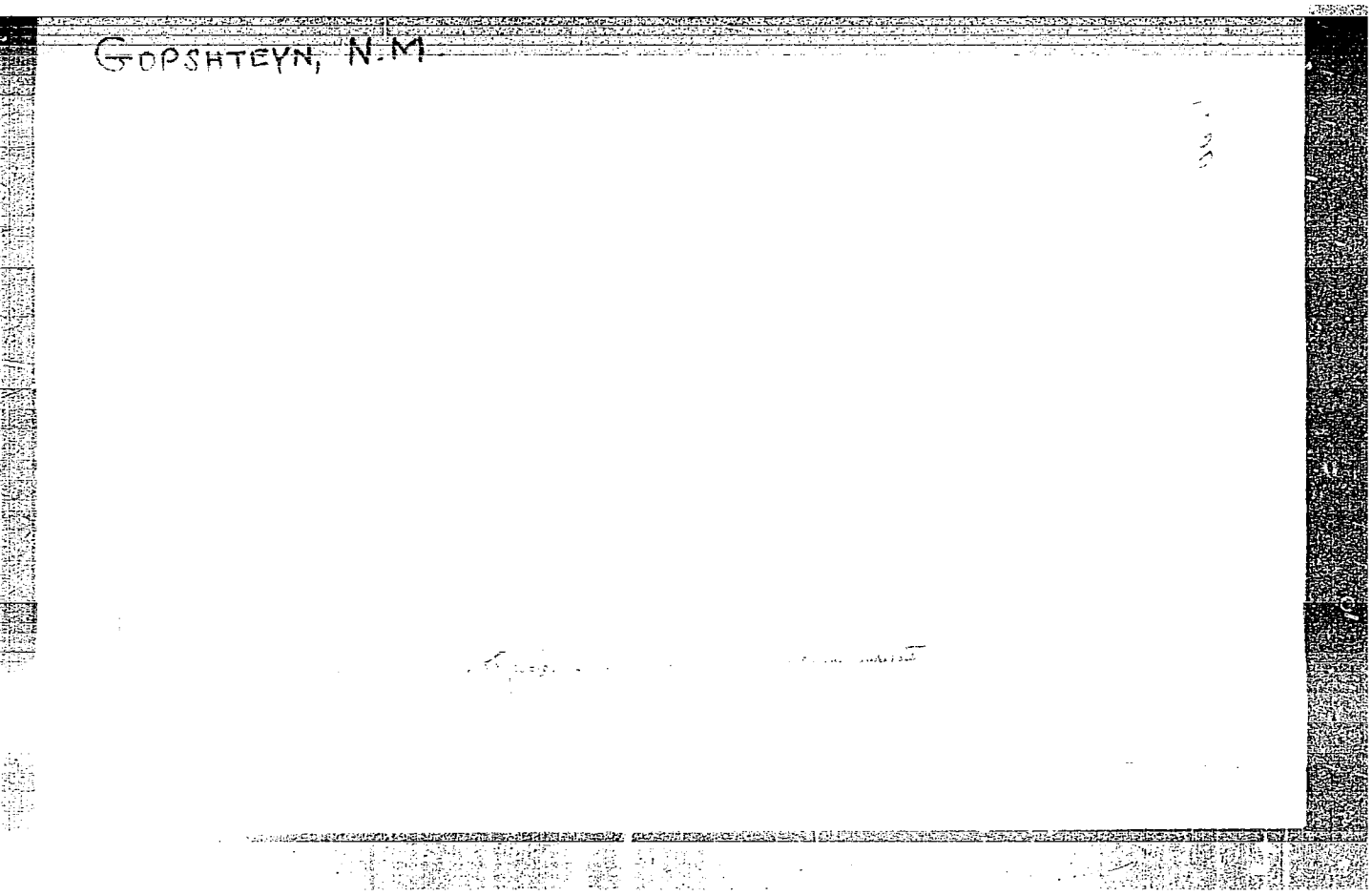
PROCESSES AND PROPERTIES INDEX

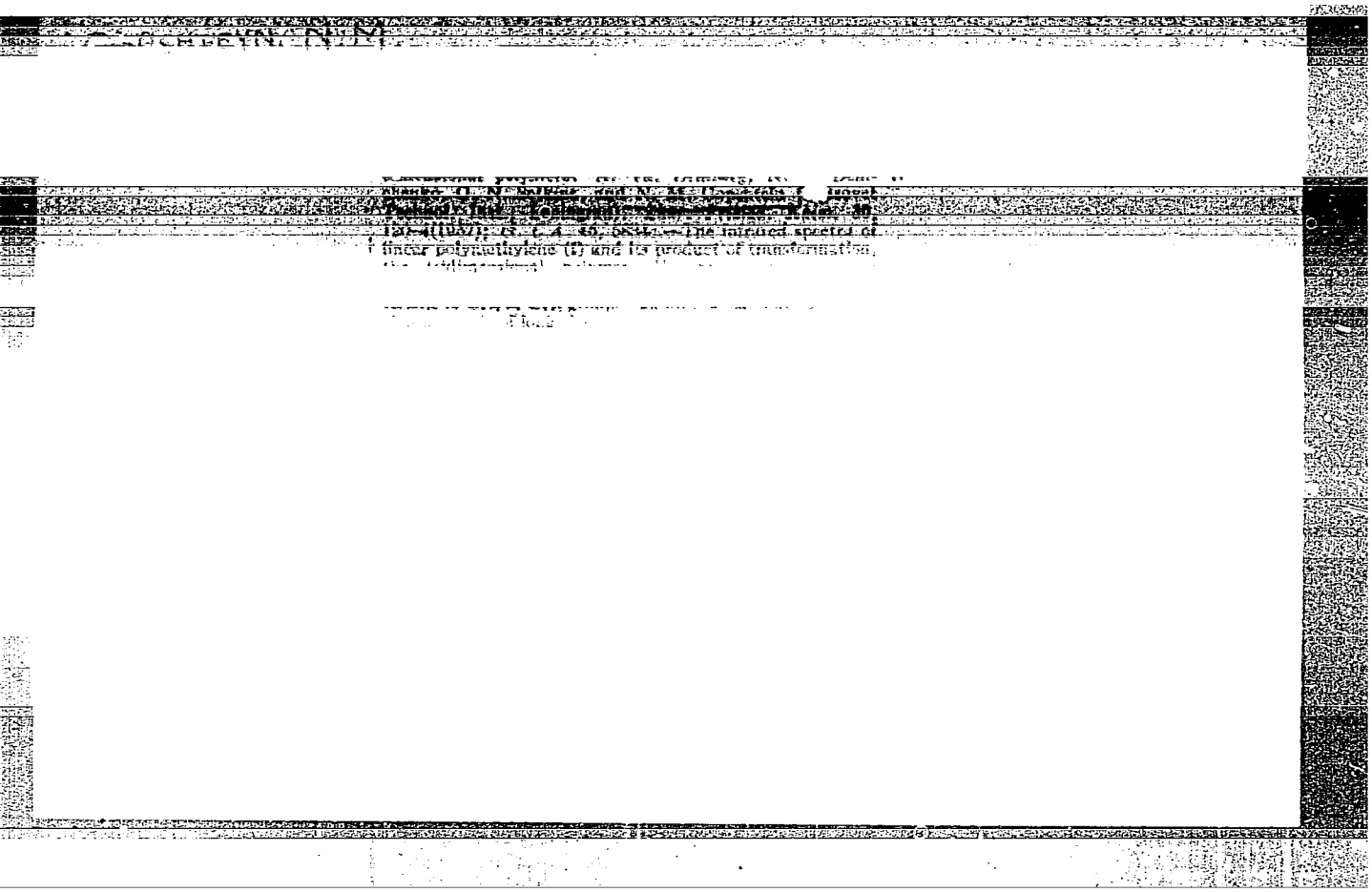
3

An approximate computation of the vibration frequencies of alcohols, ethers, and amines. N. M. Gopshtein. *J. Phys. Chem.* (U.S.S.R.) 22, 11-19(1948)(in Russian); cf. preceding abstr.—Raman frequencies of mols. contg. bonds C—C, C—O, C—N, C—N⁺, and N—N are functions of 4 consts. The frequencies and the consts. of interaction of these bonds are very similar. J. J. Bikerman

State Optical Inst, Leningrad

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION





GOPSHTEYN, N. M.; KUSHPIL', V. I.

"Day radiance of the earth's upper atmosphere in the 1.25 microns region."

report presented at the Atmospheric Radiation Symp, Leningrad, 5-12 Aug 64.

ACCESSION NR: AP4043499 S/0293/64/002/004/0619/0622

AUTHOR: Gopshteyn, N.M. ; Kushpil', V. I.

TITLE: Daytime airglow in the upper layers of the earth's atmosphere in the 1.25-micron region

SOURCE: Kosmicheskiye issledovaniya, v. 2, no. 4, 1964, 619-622

TOPIC TAGS: upper atmosphere, airglow, photoelectric spectrophotometer, solar radiation, night airglow, daytime airglow, atmospheric luminescence

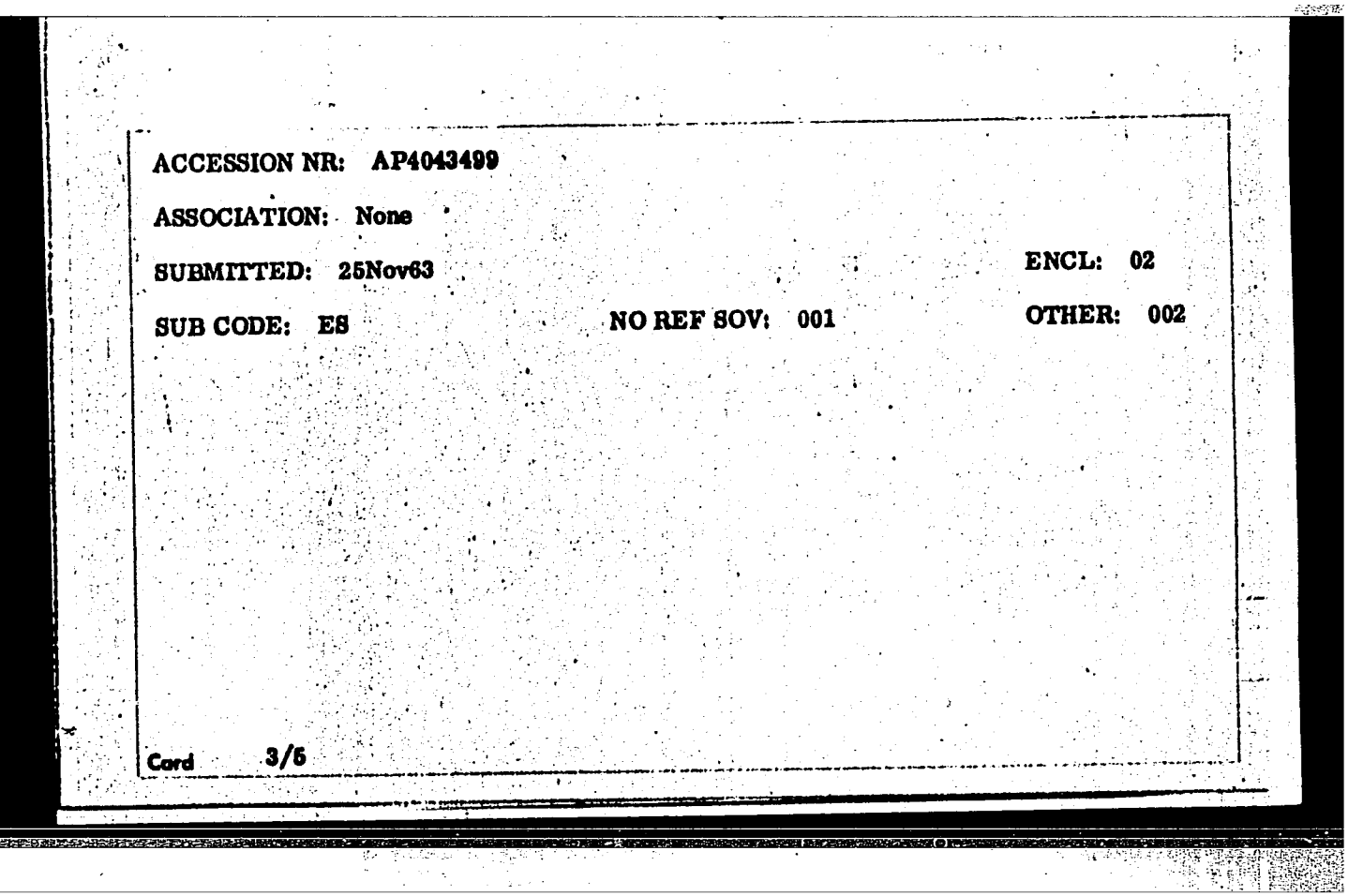
ABSTRACT: This article gives the results of measurements of the brightness of the earth's atmosphere in the near-infrared region of the spectrum at heights up to 30 km. There was found to be a considerable increase in the brightness of the upper layers of the atmosphere around 1.25 microns in comparison with adjacent parts of the spectrum. The intensity of the observed luminescence was independent of height and azimuth. Measurements were made with an automatic photoelectric spectrophotometer, and the separation of the individual parts of the spectrum was accomplished with interference light filters. The radiation detector was a germanium photodiode with a tube amplifier.

Card 1/5

ACCESSION NR: AP4043499

After amplification the signal was rectified by a synchronous detector and recorded on phototape by a mirror galvanometer. During the measurements the photometer was pointed at the sky at an angle of 30^{o} to the horizon. The field of view was 2^{o}. Measurements were made on two flights which reached heights of 30 and 20 km. Figures 1 and 2 of the Enclosure show the dependence of brightness on height for wavelengths of 1.00, 1.25 and 1.59 microns. The constancy of the luminescence at 1.25 microns with change in height indicates that its source was situated above 30 km. The observed phenomenon cannot be attributed to reflection or scattering of sunlight by clouds in the upper atmosphere, and was apparently caused by luminescence or photochemical reactions in the upper atmosphere under the influence of solar radiation. The important role of the sun in the origin of the observed luminescence at 1.25 microns is shown by the fact that the brightness considerably exceeds (by a factor of 375) the brightness of the night airglow, whereas at 1.59 microns at a height of 30 km the daytime brightness is only 50 times greater than at night. Orig. art. has: 5 figures.

Card 2/5



ACCESSION NR: AP4043499

ASSOCIATION: None

SUBMITTED: 25Nov63 ENCL: 02

SUB CODE: ES NO REF SOV: 001 OTHER: 002

Card 3/6

ACCESSION NR: AP4043499 ENCLOSURE: 01

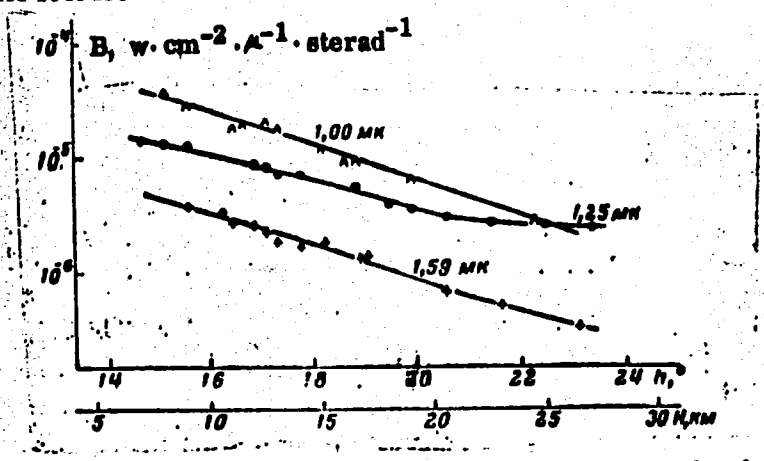


Fig. 1. Measurements of brightness on 23 September 1956 for points in the sky with an azimuth ξ of 150-180° relative to the sun. Angles of scattering φ = 115-125°. H -- height at time of measurement, h -- solar altitude, Mk -- microns.

Card 4/5

ACCESSION NR: AP4043499

ENCLOSURE: 02

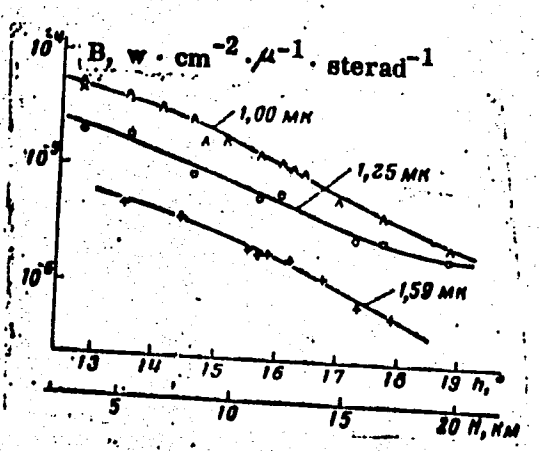


Fig. 2. Measurements of brightness on 9 October 1956. Notations same as in Fig. 1.

Card 6/6

L 2540-66 EWT(1)/FCC GW

ACCESSION NR: AT5025235 UR/2531/65/000/170/0149/0155

AUTHOR: Gopshteyn, N. M.; Kushpil', V. I. 44,55 44,55

TITLE: Recording spectrophotometer for ground and aerostat measurements of the day-sky brightness

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 170, 1965. Issledovaniye radiatsionnykh protsessov v atmosfere (Investigation of radiation processes in the atmosphere), 149-155

TOPIC TAGS: spectrophotometer, sky brightness, photodiode, threshold sensitivity, scattered radiation, spectral range, bulb intensifier, demodulator

ABSTRACT: A spectrophotometer capable of measuring the sky brightness on the ground and at heights to 35 km has been built. This instrument may be raised on an aerostat and kept elevated throughout all the measurements. A germanium photodiode having a threshold sensitivity of $2-4\cdot10^{-12}$ w·cps$^{-1/2}$, serves as the radiation receiver. Scattered radiation can be measured only with suitable instrument parameters. The measuring process lasts 0.5 sec for 10 spectral ranges, which are separated by light filters. A diagram of the arrangement of lenses and mirrors in the spectrophotometer is provided in the original article.

Card 1/2

L 2540-66

ACCESSION NR: AT5025235

A temperature change in the photodiode of the instrument is associated with the change of the inner resistance and an excess over the permitted stress limit in the photodiode. The signal is intensified by a bulb intensifier and rectified by a mechanical synchronous demodulator. The photometer is equipped with a panoramic camera, with a field of view of 240°, so that it can cover a hemisphere including the horizon. The spectrophotometer was standardized in a laboratory using a white illuminated surface with an albedo of 0.97. The threshold sensitivity of the photometer was determined with a standard device. Orig. art. has: 4 figures. [EG]

ASSOCIATION: Glavnaya geofizicheskaya observatoriya, Leningrad (Main Geophysical Observatory)

44,55

SUBMITTED: 00 ENCL: 00 SUB CODE: ES, OP

NO REF SOV: 002 OTHER: 001 ATD PRESS: 4110

Card 2/2

GOPTAREV, N.P.

"On Certain Characteristics of the Gustiness of the Wind,"
by N. P. Goptarev, Meteoroligiya i Gidrologiya, No 5, May 57,
pp 45-49

This article takes exception to the conclusions drawn by V. S. Bol'-shakov ("Concerning the Quantitative Characteristic of the Gustiness of the Wind," Meteorologiya i Gidrologiya, No 3, March 1955), stating that they are incorrect and can create a false representation for anyone studying the problem for the first time.

Taking into account the importance of studies of the wind structure in the surface layer of the atmosphere, the author presents a detailed critical analysis of Bol'shakov's conclusions, relying mainly on data from special investigations made in the Caspian Sea in 1954 and 1955 by the State Oceanographic Institute. (U)

Sum 'N 1467

GOPTAREV, N.P.

Results of gradient studies in the region of Neftyanye Kamni.
Trudy GOIN no.36:128-202 '57. (MIRA 10:7)
(Neftyanye Kamni--Winds)

GOPTAREV, N.P.

Vertical distribution of humidity in the lower atmospheric layer over the Caspian Sea according to observations made at the Neftyanyye Kamni. Trudy GOIN no.46:32-40 '59. (MIRA 13:5)
(Neftyanyye Kamni region--Humidity)

GOPTAREV, N. P., Cand Geog Sci -- (diss) "Results of research into vertical distribution of wind velocities and air humidity on the Caspian Sea in the rayon of the Petroleum Rocks." Moscow, 1960. 13 pp; (Main Administration of Hydrometeorological Service under the Council of Ministers USSR, Central Inst of Forecasts); 150 copies; price not given; (KL, 24-60, 129)